

Notice of Allowability

Application No.

10/752,935

Examiner

MANSOUR M. SAID

Applicant(s)

KENT, JOEL CHRISTOPHER

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address--

All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance (PTOL-85) or other appropriate communication will be mailed in due course. **THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS.** This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

1. ☒ This communication is responsive to 2/27/07.
2. ☒ The allowed claim(s) is/are 1-3, 6-13 & 15-25, and renumbered as 1-22.
3. ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some* c) ☐ None of the:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

* Certified copies not received: _____.

Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application.

THIS THREE-MONTH PERIOD IS NOT EXTENDABLE.

4. ☐ A SUBSTITUTE OATH OR DECLARATION must be submitted. Note the attached EXAMINER'S AMENDMENT or NOTICE OF INFORMAL PATENT APPLICATION (PTO-152) which gives reason(s) why the oath or declaration is deficient.
5. ☐ CORRECTED DRAWINGS (as "replacement sheets") must be submitted.
- (a) ☐ including changes required by the Notice of Draftperson's Patent Drawing Review (PTO-948) attached.
- 1) ☐ hereto or 2) ☐ to Paper No./Mail Date _____.
- (b) ☐ including changes required by the attached Examiner's Amendment / Comment or in the Office action of Paper No./Mail Date _____.
- Identifying Indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet. Replacement sheet(s) should be labeled as such in the header according to 37 CFR 1.121(d).
6. ☐ DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

Attachment(s)

1. ☒ Notice of References Cited (PTO-892)
2. ☐ Notice of Draftperson's Patent Drawing Review (PTO-948)
3. ☒ Information Disclosure Statements (PTO/SB/08),
Paper No./Mail Date 1/6/04 & 2/27/07
4. ☐ Examiner's Comment Regarding Requirement for Deposit of Biological Material

5. ☐ Notice of Informal Patent Application
6. ☐ Interview Summary (PTO-413),
Paper No./Mail Date _____.
7. ☒ Examiner's Amendment/Comment
8. ☒ Examiner's Statement of Reasons for Allowance
9. ☐ Other _____


RICHARD HJERPE
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 2600

DETAILED ACTION

EXAMINER'S AMENDMENT

1. An examiner's amendment to the record appears below. Should the changes and/or additions be unacceptable to applicant, an amendment may be filed as provided by 37 CFR 1.312. To ensure consideration of such an amendment, it MUST be submitted no later than the payment of the issue fee.

Authorization for this examiner's amendment was given in a telephone interview with Mr. Gerstner, Marguerite E. on March 28, 2007.

2. The application has been amended as follows.

IN THE CLAIMS

1. (currently amended) A touchscreen, comprising:
A substrate capable of propagating acoustic waves, the substrate having a touch-sensitive area; and
an array of acoustically reflective elements lying in or on the substrate, the array having an axis, the reflective array elements positioned at an angle relative to the array axis to transmit or receive acoustic signals into or out of the touch-sensitive area, the reflective array elements having a focusing shape that serves to focus acoustic wave energy passing through the elements to an area proximate a center line of the array axis, at least one reflective array element having at least one of (a) a varying width dimension with a maximum width proximate its center and (b) a varying height dimension with a maximum height proximate its center.
- ~~4. (original) The touchscreen of claim 1, at least one reflective array element having a varying width dimension, with a maximum width proximate its center.~~
- ~~5. (original) The touchscreen of claim 1, at least one reflective array element having a varying height dimension, with a maximum height proximate its center.~~
14. (canceled)

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15. (currently amended) A touchscreen, comprising:

a substrate capable of propagating acoustic waves, the substrate having a touch-sensitive area;

a first array of acoustically reflective elements lying in or on the substrate, the first array having an axis and the reflective array elements of the first array being positioned at an angle relative to the first array axis and positioned to transmit acoustic signals into the touch-sensitive area; and

a second array of acoustically reflective elements lying in or on the substrate, the second array having an axis and the reflective array elements of the second array being positioned at an angle relative to the second array axis and positioned to receive acoustic signals transmitted by the first array after the acoustic signals have traveled across the touch-sensitive area,

at least one of the first and second reflective array elements having a focusing shape that serves to focus acoustic wave energy passing through the elements to an area proximate a center line of the array axis, and the at least one of the first and second reflective array elements having at least one of (a) a varying width dimension with a maximum width proximate its center and (b) a varying height dimension with a maximum height proximate its center.

22. (currently amended) A touchscreen, comprising:

a substrate capable of propagating acoustic waves, the substrate having a touch-sensitive area and a border region adjacent the touch-sensitive area;

a first array of acoustically reflective elements lying in or on the substrate and positioned in a first portion of the border region for transmitting acoustic signals into the touch-sensitive area, the first array having a first array axis, and the reflective array elements of the first array being positioned at an angle relative to the first array axis; and

a second array of acoustically reflective elements lying in or on the substrate and positioned in a second portion of the border region to receive acoustic signals transmitted by the first array after the acoustic signals have traveled across the touch-sensitive area, the second array having a second array axis, and the reflective array elements of the second array being positioned at an angle relative to the second array axis,

the first and second reflective array elements having a focusing shape that serves to focus acoustic wave energy passing through the elements to an area proximate a center line of the first and second array axis, respectively, at least one of the first and second reflective array elements having at least one of (a) a varying width dimension with a maximum width proximate its center and (b) a varying height dimension with a maximum height proximate its center.

*Allowable Subject Matter***3. Claims 1-3, 6-13 and 15-25 are allowed.**

The following is an examiner's statement of reasons for allowance: Claims 1-3, 6-13 and 15-25 are allowed since certain key features of the claimed invention are not taught or fairly suggested by prior art. **In claim 1**, “the reflective array elements positioned at an angle relative to the array axis to transmit or receive acoustic signals into or out of the touch-sensitive area, the reflective array elements having a focusing shape that serves to focus acoustic wave energy passing through the elements to an area proximate a center line of the array axis, at least one reflective array element having at least one of (a) a varying width dimension with a maximum width proximate its center and (b) a varying height dimension with a maximum height proximate its center”. **In claims 15 and 22**, “the first array being positioned at an angle relative to the first array axis and positioned to transmit acoustic signals into the touch-sensitive area; and the second array having an axis and the reflective array elements of the second array being positioned at an angle relative to the second array axis and positioned to receive acoustic signals transmitted by the first array after the acoustic signals have traveled across the touch-sensitive area, at least one of the first and second reflective array elements having a focusing shape that serves to focus acoustic wave energy passing through the elements to an area proximate a center line of the array axis, and the at least one of the first and second reflective array elements having at least one of (a) a varying width dimension with a maximum width proximate its center and (b) a varying height dimension with a maximum height proximate its center”. The closest prior art ELO (Gomes et al. (6,636,201) teaches an acoustic touch screen having has transmitting transducers for generating acoustic signals which are deflected across a touch-sensitive area by

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array of partially acoustically reflective elements, the acoustic signals are propagated across the border regions using acoustic waveguides, so that the acoustic signals to traveling along a narrow path width, however, singularly or in combination with other prior art, fail to anticipate or render the above underlined limitations obvious.

4. Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

Conclusion

5. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Huang (6,078,315) teaches a touch panel using an acoustic wave reflection.

Cheng et al. (7,075,525 B2) teach a reflection stripes of an acoustic touch screen.

6. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Mansour M. Said whose telephone number is 571-272-7679. The examiner can normally be reached on Monday through Thursday from 8:30-6:00 P.M. The examiner can also be reached on alternate Friday from 8:30 a.m. to 5:00 p.m. EST. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Richard A. Hjerpe whose telephone number is 571-272-7681.

. Any response to this action should be mailed to:

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Commissioner of Patents and Trademarks

Washington, D.C. 20231

or faxed to: 571-273-8300 (for Technology Center 2600 only)

Hand-delivered responses should be brought to the Customer Service Window at the Randolph Building, 401, Dulany Street, Alexandria, VA 22314.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Mansour M. Said

3/28/08



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